

The copy filmed here has been reproduced thanks to the generosity of:

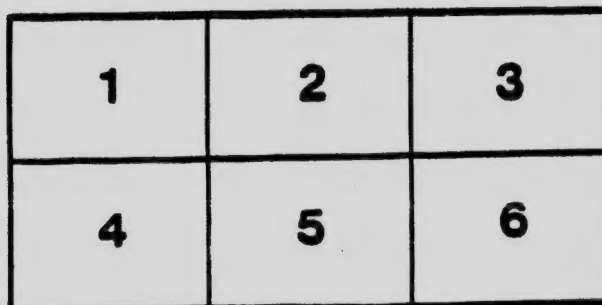
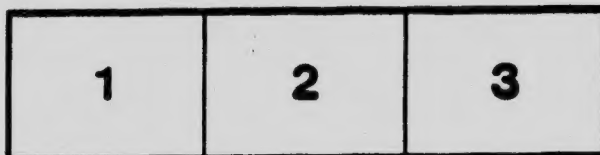
National Library of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol ➡ (meaning "CONTINUED"), or the symbol ▼ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

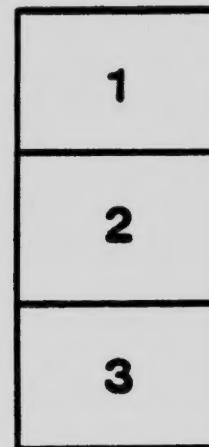
Bibliothèque nationale du Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole ➡ signifie "A SUIVRE", le symbole ▼ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.



FOR THE INTERNATIONAL GEOLOGICAL CONGRESS

INDEPENDENT SCIENTIFIC RESEARCHES
VERSUS
CANADIAN BUREAUCRATIC INTRIGUES

By J. W. SPENCER, A.M., Ph.D., LL.D.
(Author of "The Evolution of the Falls of Niagara")

Commissioner of the Geological Survey of Canada, under
the Directorates of Doctors Bell and Low for
the Scientific Investigation of the
Falls of Niagara.

TORONTO :
1913

Q180
C3
S67

*



Not in C.A.

TO THE INTERNATIONAL GEOLOGICAL CONGRESS.

GENTLEMEN:

Within Canada exists some of the most inspiring opportunities for geological investigation.

Much of the best results of scientific investigation come from researches made by individuals, and it is well recognized both in literature and in scientific research that if the work be taken up by the Government, much individual ability and effort in writing and in scientific research is likely to be stifled.

I regret that an attempt has been made to keep out of view new and important investigations in respect to some great Canadian Geological problems.

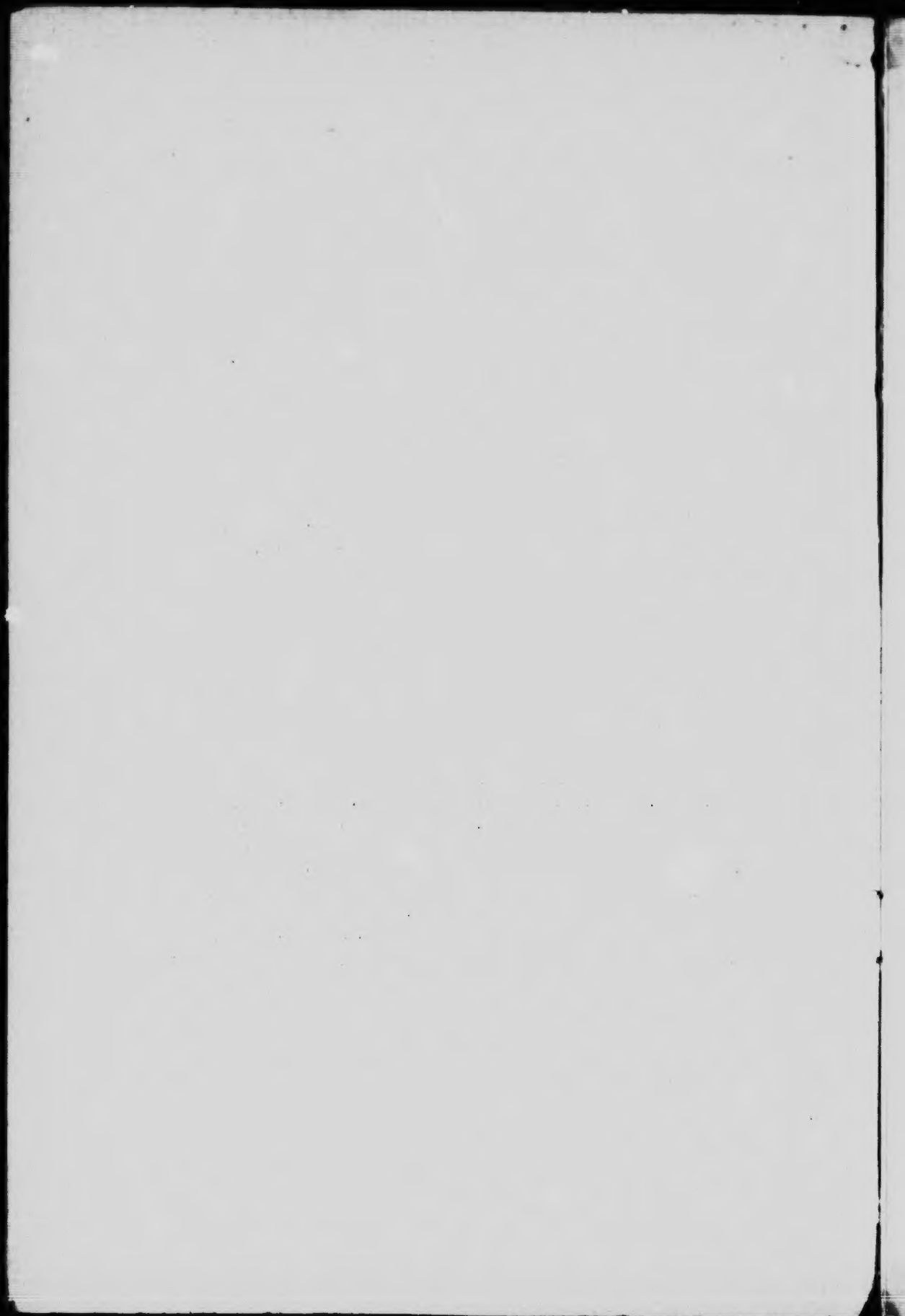
This may be owing to the tendency of the officials to magnify the work of their offices, and not to give recognition to that done by investigators not officially or permanently connected with the Government Department, and thus make a display of their power.

The accompanying statement of facts will, I think, show what has been attempted. I am led to make these statements not only to sustain the position I hold concerning the researches relating to Niagara Falls and the Great Lakes, but also on behalf of every investigator, for the purpose of preventing further attempts at using original researches and discoveries of others as a basis for revision, or for departmental work, in such a manner as to appear part of the achievements of the Bureau, under a dominant officer; or when such is impossible, to prevent the bureaucratic official from ignoring or belittling the results of independent investigators.

Yours faithfully,

J. W. SPENCER.

(Author of "The Evolution of the Falls of Niagara.")
Toronto, August 7, 1913.



INDEPENDENT CANADIAN RESEARCHES
VERSUS
CANADIAN BUREAUCRATIC INTRIGUES.

The honor of founding the International Geological Congress belongs to the late Dr. T. Sterry Hunt, whose brilliant researches did much to establish Geological Science in Canada.

The proposal to utilize the water of Niagara Falls for the production of power aroused a new interest in the Falls and gave special opportunities for investigation. These works could not fail to alter the character of the Falls themselves. I have been engaged in researches in connection with the Falls and the Great Lake District over a period of many years, studying their changing features and history. Even in the United States such researches have been largely inaugurated by me, as the literature connected with them shows. At that time, it was not known that some 93 per cent. of the water of the Falls cascaded on the Canadian side of the Boundary Line between Canada and the United States.

In the autumn of 1904, I was engaged in revising and extending my earlier investigations relating to the Falls of Niagara. Dr. Robert Bell, the head of the Canadian Geological Survey, was aware of this work being done by me, and, in June, 1905, commissioned me to make as complete a report as possible on Niagara Falls and the related features, thus utilizing, without expense to the Government, my previous work and experience, I being recognized as an expert and authority in these investigations.

It soon became apparent that more time would be required for this survey than was at first anticipated, but it was also found that the results would be much greater, and in September, Dr. Bell wrote to me:—"In spite of the greater cost than anticipated I still wish you to complete the work in a satisfactory manner." He also provided additional means for that purpose.

Unfortunately, before the report was complete, Dr. Bell was, through political influence, superseded in the direction. Yet, he was made Chief Geologist with an increased salary. Furthermore, the Minister ordered that all work inaugurated by Dr. Bell should be completed under him.

As far as can be learned, this change of position in regard to Dr. Bell was the result of intrigue within the Department, and, to justify it, those who had brought about the change found it necessary to disparage work inaugurated by Dr. Bell, and accordingly the commission for investigating Niagara Falls was selected, as it had been given to one (although a specialist) not connected with the survey or the official aspirants.

Dr. Bell's opinion of my Niagara report is shown in the following letter, addressed to me after the publication of the book:

"It was with the responsibility of the official head of the Geological Survey of Canada that I gave you the commission to do the necessary field work and to prepare the report, knowing your earlier work on the Great Lakes and Niagara River, which gave you a preparation that no other man possessed; besides which it was your logical right under the circumstances to perform this work. Indeed, there has been hardly a discovery in the geological history of Niagara Falls, or of the physical changes which have taken place there, that has not been due to your investigations. The reason for this was that the problems to be worked out formed a unique subject of inquiry, the solution of which depended upon methods of physical investigations that you, in a great measure, originated. The facts which you brought to light will remain in evidence as long as interest in the subject lasts, and they will always be an abiding record of what the Falls were in your day. Hennepin left us the first description of the Falls; you have solved the history. Nor can any observations which repeat your results, even with variations, be considered as rivalling them. They appear to be so complete as if little new material of importance can be added, but I am sure that you would welcome any fresh data that may be found, and that you would be generous to those following in your footsteps. Finally, it may be said that your book is a record of a monumental work on a great and unique subject, of which any geologist of this generation might well feel proud."

I have received many communications and reviews expressing like opinions concerning the monograph mentioned.

Mr. Low, the new head of the survey, immediately assumed (April, 1906) complete control, and extended the time for the completion of the work to July the 1st, which extension was then acceptable to me. Naturally, he could not be expected to be greatly interested in these investigations, not having had experience in such researches.*

Shortly afterwards, Mr. Low ordered the expenses to be discontinued, yet insisted upon the report being completed before the expiration of the time fixed by him. He also demanded that the report should be addressed to him in place of to Dr. Bell (as had been ordered by the Minister).

By his course of action, aggravated by a most offensive correspondence, my confidence in him was so shaken that I did not dare to sur-

* Mr. Low had been mostly engaged in explorations far away from Niagara. (See Geological Bibliography, U.S. Geological Survey).

render the manuscript without some pledge that it would not be buried or left unpublished, or its contents plagiarized.

By Dr. Low refusing to pay accounts the survey was suspended. I, however, was still willing to complete it on his original terms. He could not insist upon me delivering an incomplete report, which he at one time offered to accept. He did not seem to appreciate the character of the work but only its cost* a large part of which has been borne by myself. Had it been an ordinary professional commission for a client, I should have abandoned the whole affair.

Under such harassing and mischievous obstruction I returned to the researches on my own account, and had nearly completed the report in December, 1906, with the manuscript still requiring a final literary revision.

Parliament was now coming for the report. Mr. Low and I met in New York, not having seen each other before. We came to an agreement of which only the following points need to be mentioned, viz.—

In order to receive the manuscript immediately and to avoid further expenses outside of the office, Mr. Low offered to have the literary editing done in the Ottawa office, but subject to my approval. He promised to publish the report with all possible despatch under the direction of Dr. Bell (in conformity with the Minister's orders), but this part of the agreement Mr. Low repudiated after his return to Ottawa.

Upon Mr. Low's receipt of the manuscript, he ordered the literary editing to be done in the office and 4,000 copies of the book to be printed. Shortly afterwards Mr. Low fell ill. From this time forth his responsibility ceased.

Subsequently, a conspiracy was developed in his office to suppress the publication of the book; in this Mr. Broek took part, although only a subordinate, having no business whatsoever with my work.

I regret being now obliged to make known this previously unpublished history, but owing to the renewed attempt, at the Survey office, to ignore the original Niagara researches, before the International Geological Congress, although they had been published in spite of the intrigue, I am driven to this exposure.

* Mr. Low had resigned from the Canadian Survey to explore for a Philadelphia company certain mineral lands, the knowledge of which he had obtained in the course of his official work, thus breaking his connections and claims to advancement on the Canadian Survey. But not very long afterwards he sought re-instatement, which was accorded him by Dr. Bell.

With hardly a pretense of editing the manuscript, it was sent from the Survey Office to the Printing Bureau, where it was set up in unsuitable type, against which my protests, however, were heeded, when it was reset in proper type, but again without being edited. This persistent failure to edit was a fundamental breach of agreement with Mr. Low. Dr. Bell never had the opportunity of seeing the manuscript or proof.

It became clearly apparent that this course was part of a conspiracy to retard my independent action and ultimately to make the imperfections of the book an excuse for its suppression, regardless of the cost being entailed. At length, the limit of my endurance was reached, and I announced my withdrawal, intending that the book should be published independently of the bureaucrats. At this time Mr. Low had suffered a serious relapse in health. My action caused the obstruction to be ostensibly removed. This gave me direct intercourse with the printer; and also an opportunity of (hurriedly) editing the book myself, as I should have done at first, had I not acquiesced in Mr. Low's request to deliver the manuscript immediately, for political reasons.

This Niagara investigation had no relationship to mining, yet a libelous attack was then made upon my report in a mining magazine, notwithstanding its contents should have been kept confidential in the Survey Office, which was under contract to co-operate with me and not to obstruct the publication.

Eventually, the book was on the press but it was withdrawn without explaining to me the reason therefor. At that time, there was no responsible official in the Survey Office, and the Minister had been absent for months, later, it appeared that the Acting Minister (the Minister of Customs) having no personal knowledge of the business or misrepresentations made to him, had permitted the suspension of the printing. After the return of the Minister, the fraternity of conspirators, all irresponsible subordinates, of whom Mr. Brock was one (although I had not heard of him before), sent a memorial to the Minister with an alleged copy of the proof (it being the non-edited one), recommending the suppression of the book, on the ground of literary defects (which editing would have removed), here, then, is found the motive for the persistent non-editing of the report, viz:—to furnish ostensible ground for suppressing its publication, and further cast reflections upon Dr. Bell's administration.

Fortunately, I was able to submit the revised proof to the Minister, who himself had been an editor. He read it, referred it to one of Canada's most

distinguished scientists, and ordered the immediate printing of the book, which covers 521 pages and nearly 100 maps and illustrations. What imperfections may appear in it must be chargeable to the intrigues described.

Even this defeat of the intriguers by the Minister was not final. When all except two sheets of the book had been printed, Mr. Brock (who, although only a junior official, had at this time been appointed through political influence the head of the Survey), requested the Printer (without even consulting me) to delay press-work until he had seen the proof. I was asked by another official to leave *both* copies of the proof at the office, for a short time, with the promise of their immediate return. At the same time, Mr. Brock left town. The proofs were not returned. It was evident that in this unbusinesslike underhand manner, Mr. Brock and his assistant expected to retard, if not eventually to stop, the last part of the printing, by thus getting it off the press. At once, I took other copies of the final proof sheets to the Minister, who ordered their immediate printing which was completed before Mr. Brock's return.

Mr. Brock was the one person responsible for this ruse. No amount of evasion or perversion can avail him in this case.

On Jan. 8th, 1908, I received my copies of the publication, almost a year after the delivery of the manuscript. It was a year largely employed in strenuous defense of original scientific research against machiavellian bureaucratic intrigue. This bureaucratic obstruction cost the Government not less than an additional \$3,000, and myself in time and money another \$4,000, besides producing other detrimental effects.

Having won every battle, I thought the matter closed, but not so. The Minister, when ordering my copies of the book to be bound, gave permission for the binding of others for distribution to libraries and otherwise. This was not done, so that Mr. Brock as head of the Survey, becomes responsible for the destruction of many copies.

Furthermore, Mr. Brock refused to provide permanent monuments for the future survey of the recession of the Falls, thereby throwing away most important records of Canadian work.

The distribution of the monograph on Niagara Falls to the libraries seems to have been unnecessarily delayed, as if for a purpose. The U.S. Geological Survey did not receive copies until June 15, 1908. Yet, as early as in February, a malicious attack was made on the Author, in a mining magazine of the Pacific Coast, but the motive of its publication is only apparent when considered in the light of a continuation of the conspiracy described, the more so as some of the

Ottawa intriguers had been contributors to this mining paper. The writer of the article exhibits contempt for the general understanding or fairmindedness of the public. He says:—"As a warning and example of bad writing we quote seven paragraphs" (*each of which was selected from as many different pages and topics scattered throughout the book*). But the writer of the article does not state that each paragraph of itself is perfect, and that he dishonestly put them together as if relating to one discussion for the purpose of discrediting the Author. The same critic further vituperates against the new results obtained, comparing them with a short essay by another author, in which essay some of the most important features had been first shown in my earlier reports on Niagara and the Great Lakes. This demonstrates what fierce jealousy my work had aroused, and the malicious means used to discredit it.

This attack, immediately made, in a mining paper, 3,000 miles away from Niagara, before the general distribution of the book, could scarcely have been prompted by the interest of its usual readers; also its character was too discreditable for a scientific journal. But the attack was carried to Parliament to be used as another implement in attempting to suppress the Niagara book. The effort failed in April, 1908 (as shown by the Parliamentary records). It was after this date that it was distributed to the libraries.

Such was the confusion existing in the Geological Survey Office two years after the change in administration—unnecessarily repeated five years later.

Why, at this time, publish such a record of bureaucratic intrigue? Because of the repeated effort to cast discredit upon the original investigations before the International Geological Congress, by Mr. Brock, as Secretary of the Congress and Director of the Canadian Survey, after their successful publication, in spite of the conspiracy already described. Furthermore, this action tends to rob Canada, as well as the former Director and the Author, of scientific honors. The meeting of the Congress has given the intriguers described and their friends too tempting an opportunity to be resisted for renewed underhand attacks; for it was decreed that the Author of the "Evolution of the Falls of Niagara," should be absolutely replaced in demonstrating the features of the Falls to the Congress, and the honors for so doing should be conferred on Prof. Coleman who has published no investigations on the subject, and on Mr. Taylor, an American gentleman, who is making a report on Niagara Falls to the U.S. Geological Survey, and who previously had made excellent researches on asso-

ciated problems. Neither of these gentlemen are responsible for this scandalous condition—Prof. Coleman having suggested my name, and Mr. Taylor having expressed himself not desirous of the commission. Can anyone possibly regard this policy of Mr. Brock other than a continuation of his previous efforts to have the book suppressed, although it had unnecessarily cost the Government so much as \$12,000, besides the large extra cost occasioned to me on account of the intrigues in the Ottawa office.

The whole proceeding described shows the desperate attempt to obscure the results obtained by the Survey, independently of and prior to Mr. Brock's dictatorship. But it may not be amiss to remind Mr. Brock that the meeting of the Congress in Canada is the result of an earlier invitation proffered and conveyed to the Congress by Dr. Bell his former chief.

Not only in the east, but also in the far west, Mr. Brock is making the Canadian Survey an adjunct to the U.S. Survey, in commissioning another member of that Survey to report on the Fraser River. But let us return to Niagara.

It may seem plausible that Mr. Brock should cause a survey of Niagara Gorge to be jointly made with the U.S. Geological Survey; but in doing so, he handed the work completely over to U.S. Survey; although there is a scientifically more complete map in the Survey Office made under the direction of Mr. Brock's predecessor. This is no reflection on the skilful U.S. topographer who is making the usual topographic map, with contours of equal height, at intervals of ten feet apart. On this map the streets of the towns are shown. This however, is very far from what is wanted. Such a map does not generally show the position of the river banks before the gorge was made, or the important character of the terraces at Foster's Flats, or the borings whereby the effects of the now buried valleys upon the recession of the Falls are now made known, or the soundings of the depths of the river necessary in measuring the changing work of the Falls themselves. All of these fundamental features are shown on my Niagara map; but from which are excluded the streets of the towns, as such only tend to confuse the illustration of the natural features.

This map is another official waste of money at Niagara River, under Mr. Brock's administration, besides ignoring the fuller work of the Canadian Survey before his time.

How can such a subversion fail to give a wrong impression of Canadian research to the Congress when science must be defended against Canadian

officials.* This attempt at overshadowing original Canadian research must be deplored.

How did this conflict between research and officialism originate. It seems to have been begun with Mr. Low's inexperience of this branch of physical science, out of his sudden elevation to office, out of official antagonism towards the commission for this work relating to America's most famous geographical feature (Low and I being strangers to one another), from Mr. Low's attempt to gain credit out of apparent economy at the sacrifice of completeness, out of his attempt to usurp the honors of the undertaking which belonged to his predecessor. All of the trouble would have been avoided had Mr. Low adhered to his original agreement, which would also have saved thousands of dollars. He assured me that he could do anything being in office, and that I was powerless. Nevertheless, my position was vindicated by the Government. This was too much for Mr. Low's henchmen, even after Mr. Low and I had come to an agreement, and his illness gave them the opportunity; although the conspirators all held inconsequential and irresponsible positions, yet they were able to obstruct, as has been described. Those of them whom I had met under Dr. Bell's regime had been as obsequious to me as they were afterwards offensive.

This intrigue against the Niagara researches, was in reality a continuation of that against Dr. Bell, whom one of the outside friends of the conspirators advised me to discard. And why? Because Dr. Bell had reached the time of service when he could retire, and accordingly should make room for others. No other reason was given. These men could not understand my loyalty to Dr. Bell, who had given me opportunity looking to the completion of the life-long work relating to that great problem "The Evolution of the Falls of Niagara," nor were they willing to admit the defence of Dr. Bell's rights, as ordered by the Minister.

Regardless of my experience and services given gratuitously to the work, my honorarium gave great offense in the Ottawa Office. These

* Mr. Brock had been a camp assistant to Dr. Bell (whose name he does not mention in his biography), without his publishing results. Subsequently, while holding the rank of assistant, he reported on five similar mining localities or camps in British Columbia, and three other places, but not on any of the great physical problems of Eastern Canada. It was only a year before he became head of the Survey that he attained the rank of Geologist, at the age of 31 years. However, he was strong in physical sports. With such a limited scientific experience, it is incomprehensible to me that he should have become a successor of the distinguished Logan, founder of the Survey, and placed over the heads of many senior officers.

men could not understand my devotion to scientific research, other than for sordid motives.

The Canadian committee of the Congress, which is primarily a scientific and not a technical society, is mostly composed of men connected with the Geological Survey, under Mr. Brock, or others engaged in the mining pursuits. Gentlemen engaged in such pursuits are naturally strangers to the investigations of Niagara Falls and the History of the Great Lakes (although these involve great economic problems). However, Prof. Coleman is not one of these, he having made a re-survey of the north shore of Lake Iroquois (one of the excursions), first described and named by me, in 1888, as well as other investigations. Prof. Adams (formerly assistant on the Survey and an active supporter of Mr. Low), has contributed nothing whatever to the elucidations of these problems investigated by me.

Even the further study of the marine deposits at Adams' own door, in Montreal, made famous by his distinguished predecessor (Dawson), has to be relegated to an efficient foreigner, and not even to a student of Adams, as has been the case of Niagara and the Great Lakes. Is not this condition deplorable from the scientific, scholastic and Canadian points of view. It is true that Adams has repeated technical experiments on strength of materials and done petrographic work, and no matter how interesting these may be to a few persons, they should not exclude from the University studies of the more general problems of physical geology, where such great opportunities have been offered as in the Great Lake and St. Lawrence regions.

The lack of interest in such problems of physical geology at McGill University under Prof. Adams, impressed itself upon me, when one of his young graduates was sent to me as an assistant at Niagara. On coming he seemed to have no ideas or interest in such problems, although the investigations had been previously advanced, so that I was suspicious that the Professor had given no attention to them. But the young man showed great animosity to Dr. Bell, the qualifications of whom this student himself could know nothing. This, however, was in keeping with Adams' partisan letter (*Nature*, Dec. 13, 1906), for the purpose of defeating Mr. Low, which contains insinuations against his own former chief, Dr. Bell. This correspondence in *Nature* (see issue of June 21, 1906) further shows Mr. Low's desire to reduce the scientific labors and reputation of others to a standard in-

ferior to his own, when advanced to his new official rank.* This course was severely and deservedly censured by an English writer in *Nature* (July 12, 1906).

In the correspondence in *Nature*, referred to, Prof. Adams cites Mr. Low's training under Sir William Dawson as a special qualification—a qualification also possessed by Bell and myself, but Bell was also trained under Logan, Hunt and Billings. In this connection, Dawson's last expression concerning me read: "I consider [Spencer] one of our best and most reliable workers, and as a man likely to add very largely to the high reputation he has already attained." The qualification of being Dawson's student was not possessed by Mr. Brock. Prof. Adams also referred to the Directorate of the Survey being offered to himself and to Prof. Coleman (as the result of the intrigue against Dr. Bell). The newspapers said that there were eighteen aspirants.

Official intriguers have no regard for agreements or contracts; they are vandals and there is no achievement that they will not try to overthrow, no reputation that they will not try to pull down. They conduct themselves as if nothing that their victim may do can be right. Although they themselves are inconsequential, they are able to noise abroad misrepresentations until the public believes there must be cause for the turmoil. When they aspire to dethrone a man of repute, the conspirators (although they themselves may be little known or not at all) suggest betterment by the selection of some outsider of reputable position to replace him, knowing that he will decline to accept. This process may be repeated until their nominee advises the appointment of one of their number (as expected), which advice strengthens the political support. The offer of the office is a compliment that can again be turned to the advantage of this outside friend in strengthening his own position, by letting the offer be known to those who will be impressed thereby. The anonymous reports in the newspapers, preparing the public for a change of administration, and suggesting a successor, together with Adams' letter in support of Low (see letter in *Nature* cited) suggest such a sequence of events at Ottawa, of which several examples could be cited elsewhere. Add to this:—

* Dr. Bell was senior officer and had been acting Director for five years; but upon Mr. Low's appointment, the Government considered it necessary to make Dr. Bell Chief Geologist, which status Low refused to recognize. It was nearly three years later that Dr. Bell entered the retired list. One of three official aspirants for Bell's position boasted to an acquaintance of mine, as early as 1903, that he would soon be Director. But he failed.

Governments usually care nothing for a geological survey, so long as there is no internal disturbance or clamor of some promoter. Since this history began, the Geological Survey at Ottawa has been shifted from the Ministry of Interior, to that of Inland Revenue (again under the Ministry of Customs acting temporarily), then back to the Interior, and now it is attached to the State Department. Consequently, the Government can know almost nothing of the workings of the Bureau.

Prof. Adams, of McGill University, President of the Congress, was made acquainted with the conditions of the Survey, and disregarded Sir William Dawson's opinion of even my earlier work, and acquiesced in and did not veto Mr. Brock's decree that "No official recognition should be given to me for the investigations of Niagara Falls, or the Great Lakes or anything else." Thus their offices are used to transfer the honors, due the founder of these modern researches, to others, and in doing so the original scientific investigations, are thereby belittled. In what light will American and European scientific men regard official Canadian science and ethics?

Are the Survey and the Congress to be used to exploit science for sordid gain or official power, or are these organizations to be used for the advancement of knowledge?

Admiral Peary had a tremendous fight against imposture, and in some quarters he is still censured for having a bad temper in exposing the false claims. He had to conquer almost universal prejudice as well as the North Pole, I believed in him from the first at a time when a well-known Geologist said to me,—“You are the first man I have met who believes in Peary.”

I had to conquer the Canadian Survey, but again I am having to renew the defense against a surreptitious repetition of the same attack, although my work is published.

Prof. John Crouch Adams, the discoverer of Neptune, was less fortunate, for Sir George Airy, Astronomer Royal, smothered the publication of it. Two years later this Planet was independently discovered by Le Verrier in France, and his results were published. This priority of publication gave the honors to Le Verrier and to France, at the expense of Prof. J. C. Adams. Airy also said that the Atlantic Cable could not be laid or worked.

Strange as it may seem, Messrs. Brock and Frank Adams are doing all they can to drive the credit of the Niagara researches from their Author and from McGill University and from Canada.

But there was one serious offense to which I must plead guilty. This was the use of the personal pronouns "I" and "my," as applied to new observations. It was necessary to do so in order to indicate the authority for the announced results. My previous experience had also proved the necessity of stating, in no doubtful language, who was the author of important discoveries, although to do so might limit the applause given subsequently to excellent assayists or revisionists, aspiring to the honors due to the pioneer.

This long war between research and officialism has been costly in time, money, and wasted energy. It impaired the Niagara researches, and some of the nine additional chapters, since published by me, might have been included in it. The Niagara work has also opened up other and wider fields, the investigations of which have not yet been announced. But why undertake such, if the societies and the surveys are to be exploited, as described, thus making necessary the strenuous defense of the researches as is here set forth. This scramble for unearned and unmerited official honors prevails everywhere about us. It is our duty to resist it although we may be hurt thereby.

It is remarkable how history repeats itself, and that a duty has been imposed upon me, at this time, to defend original geological research against Canadian bureaucratic intrigue. Over twenty years ago, the late Prof. E. D. Cope was compelled to expose the suppression of one of his monographs on Vertebrate Palaeontology (although ordered by Congress, with the plates already made, at a cost of \$10,000), by the Director of the U.S. Geological Survey, for reasons and by methods similar to those just described. This occurred only a short time before the retirement of Major Powell from the directorship.

DISASTROUS EFFECTS OF GOVERNMENT DOMINATION OF SCIENCE.

(From the Congressional Report on the U. S. Geological Survey, by the Hon. H. A. Herbert, later Secretary of the U. S. Navy.)*

The report discusses not only the composition of the regular staff of the U.S. Survey, but of its widely scattered patronage, and then asks: "Is it a roll of honor, containing the names of those scientists, who are most worthy to add to our great geological establishment, whose extent astonishes and whose 'magnificence' so inspires Englishmen."

* Report No. 2214, 49th Congress, 1st Session.

"We are forcibly reminded of a discussion of the subject by Buckle in his *History of Civilization*. He is treating of the results of Governmental protection of literature and science in the so-called splendid reign of Louis XIV., and proves clearly that it was most disastrous. He considers separately what was done during that era, in France, and elsewhere; in mathematics, astronomy, botany, zoology, pathology, anatomy, and the mechanical and inventive arts, all of which Louis fostered and cared for, and he demonstrates that science as well as literature failed to advance in France as it did in other countries."

"Buckle said that Louis stifled independent thought, and repressed the spirit of individual enterprise; that science and literature were put in bondage, and reduced to a state of abject servility."

"When those in the service and other protégés outside, 'all loyal to their chief,' to use the phrase well-known to bureau officials, are provided for, is there any room in this field for individual enterprise?"

"If not, then all American geology must be under one man, whose favor must be retained, whose theories must be sustained, and so there can be no independent thought. Monopoly that gives absolute control, that puts in the hands of one the power to say who and who only shall pursue geology profitably, will most assuredly put science in bondage, and its votaries, in the language of Buckle to 'Scamble in miserable rivalry for the sordid favors of a court.'"

Buckle's conclusions are:

"Under such a system the natural results are first the impoverishment and servility of genius, then the decay of knowledge, then the decline of the country. Three times in the history of the world has this experiment been tried. In the ages of Augustus, of Leo X., and Louis XIV., the same method was adopted; and the same result ensued. In each of these ages there was much apparent splendor, immediately succeeded by sudden ruin. In each instance the brilliancy survived the independence; and in each instance the national spirit sank under the pernicious alliance between government and literature, by virtue of which the political classes became very powerful and the intellectual classes very weak, simply because they, who dispense the patronage, will, of course, receive the homage; and if on one hand the Government is always ready to reward literature, so on the other hand will literature be always ready to succumb to government."

The Government domination, as described, may affect alike the many excellent men in office and the independent workers.

Those of us who have survived the eighties see how the predictions of Secretary Herbert have been fulfilled. At that time "there was

drawn to Washington the most brilliant group of geologists." To-day, the Survey "is not contributing in any large way to the advancement of science." (Van Hise* one of the brilliants, now President of the University of Wisconsin.) The advancement of "Astronomy in this country (America) is through . . . the university and private observatories, not through the Naval Observatory." (ib.)

I have personally known the uneducated head of a bureau (not geological) who, on being asked to publish scientific results of an accomplished investigator, throwing the manuscript on the floor, for no other reason than on account of his own ignorance and his growing personal jealousy. I know an independent authority, in another branch of geology than my own, who was unable to find one new idea in 500 pages of official revision in the same field.

The writer has nothing personal to gain by this exposure. There is no office professional or financial desired by him. As a young man he aspired to know Nature herself; and, (although it would seem that he has added to our knowledge of it), he has never schemed to appear as an authority by belittling the discoveries of others, or by the mere revision of their work even with additions. The opportunities were still open for original observations in new fields. He has based his results upon these, with precise measurements of the phenomena. The recognition of his discoveries is his right. A right which it is his duty to defend and maintain. A right which no man can set aside. Furthermore, this exposure is a duty for the protection of independent research. A duty for the defending of the Congress against official artifice. A duty to the Canadian people.

* Science, Vol. 36, p. 196, 1912.

